



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Wang, et al.

Serial No.: 10/800,112

Confirmation No.: Unknown

Filed:

March 12, 2004

For:

Method of Depositing an Amorphous Carbon Film for

Metal Etch Hardmask

Application

*๛๛๛๛๛๛๛๛๛๛* 

Group Art Unit: Unknown

Examiner:

Unknown

Commissioner for Patents P.O. Box 1450

Alexandria, VA 22313-1450

CERTIFICATE OF MAILING 37 CFR 1.8

I hereby certify that this correspondence is being deposited on , 2004 with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

06/07/WAY Date

Signature

Dear Sir:

## INFORMATION DISCLOSURE STATEMENT

The Applicants, and the Attorney who signs below on the basis of the information supplied by the inventor and the information in his file, submit herewith patents, publications, or other information of which they are aware, which may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR § 1.56.

While the information submitted in this Information Disclosure Statement may be material pursuant to 37 CFR § 1.56, it is not intended to constitute an admission that any patent, publication, or other information referred to therein is prior art for this invention unless specifically designated as such.

In accordance with 37 CFR § 1.97, this Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other possibly material information as defined under 37 CFR § 1.56(a) exists.

The patents and/or publications submitted herewith are set forth on the attached Form PTO-1449.

If the sum of \$180.00 is due under 37 CFR § 1.17(p) pursuant to § 1.97, the Commissioner is hereby authorized to charge this fee, and any other fee necessary to make this submission timely, to the Deposit Account No.20-0782/AMAT/8245/BKH.

Respectfully submitted,

Brian K. Hrna

Registration No. 41,852

MOSER, PATTERSON & SHERIDAN, L.L.P.

3040 Post Oak Blvd. Suite 1500

Houston, TX 77056

Telephone: (713) 623-4844 Facsimile: (713) 623-4846 Attorney for Applicant(s) Under the Reperwork Reduction Act on 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449A/PTO

## INFORMATION DISCLOS STATEMENT BY APPL

(Use as many sheets as necessary)

Sheet

| Application Number     | 10/800,112            |
|------------------------|-----------------------|
| Filing Date            | MARCH 12, 2004        |
| First Named Inventor   | YUXIANG WANG, ET AL.  |
| Group Art Unit         | UNKNOWN               |
| Examiner Name          | UNKNOWN               |
| Attorney Docket Number | AMAT/8245/DSM/BCVD/JW |
| Submission Date        | <u>06/07</u> ,2004    |

| U.S. PATENT DOCUMENTS |              |  |                  |                             |   |  |
|-----------------------|--------------|--|------------------|-----------------------------|---|--|
| Examiner              | Cite<br>No.1 | Document Number                          | Publication Date | Name of Patentee or         | Pages, Columns, Lines, Where                    |  |
| Initials*             |              | Number-Kind Code <sup>2 (if known)</sup> | MM-DD-YYYY       | Applicant of Cited Document | Relevant Passages or Relevant<br>Figures Appear |  |
|                       | A1           | US-6,635,583 B2                          | 10/21/2003       | Bencher, et al.             |   |  |
|                       | A2           | US-6,624,064 B1                          | 09/23/2003       | Sahin, et al.               |   |  |
|                       | А3           | US-6,573,030                             | 06/03/2003       | Fairbairn, et al.           |   |  |
|                       | A4           | US-6,541,397 B1                          | 04/01/2003       | Bencher                     |   |  |
| -                     | A5           | US-6,458,516 B1                          | 10/01/2002       | Ye, et al.                  | ,   |  |
|                       | A6           | US-6,423,384 B1                          | 07/23/2002       | Khazeni, et al.             |   |  |
|                       | A7           | US-6,413,852                             | 07/02/2002       | Grill, et al.               |   |  |
|                       | A8           | US-6,380,106                             | 04/30/2002       | Lim, et al.                 |   |  |
|                       | A9           | US-6,358,573 B1                          | 03/19/2002       | Raoux, et al.               |   |  |
|                       | A10          | US-6,333,255                             | 12/25/2001       | Sekiguchi                   |   |  |
|                       | A11          | US-6,331,380 B1                          | 12/18/2001       | Ye, et al.                  |   |  |
|                       | A12          | US-6,323,119 B1                          | 11/27/2001       | Xi, et al.                  |   |  |
|                       | A13          | US-6,316,347                             | 11/13/2001       | Chang, et al.               | _   |  |
|                       | A14          | US-6,291,334 B1                          | 09/18/2001       | Somekh                      |   |  |
|                       | A15          | US-6,235,629                             | 05/22/2001       | Takenaka                    |   |  |
|                       | A16          | US-6,214,730                             | 04/10/2001       | Cooney, III, et al.         |   |  |
|                       | A17          | US-6,211,065 B1                          | 04/03/2001       | Xi, et al.                  |   |  |
|                       | A18          | US-6,165,890                             | 12/26/2000       | Kohl, et al.                |   |  |

|           |      | FORE  | REIGN PATENT DOCUMENTS |                             |   |                  |  |
|-----------|------|---|------------------------|-----------------------------|---|------------------|--|
| Examiner  | Cite | Foreign Patent Document   | Publication Date       | Name of Patentee or         | Pages, Columns, Lines,                                | . L <sub>e</sub> |  |
| Initials* | No.  | Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known) | MM-DD-YYYY             | Applicant of Cited Document | Where Relevant Passages or<br>Relevant Figures Appear |                  |  |
|           | B1   |   |                        |                             |   |                  |  |
|           | B2   |   |                        |                             |   |                  |  |
|           | В3   |   |                        |                             |   |                  |  |
|           | B4   |   |                        |                             |   |                  |  |
|           | B5   |   |                        |                             |   |                  |  |

**Date Considered** 

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. a Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. skind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450. If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2

Please type a plus sign (+) inside this box

2

Sheet

31 CE

AMAT/8245/DSM/BCVD/JW

2004

| Under the Paperwork Reduction Act of 1995, |                      | Approved for use through 07/31/2006. OMB 0651-00<br>latent and Trademark Office: U.S. DEPARTMENT OF COMMERO<br>ection of information unless it displays a valid OMB control number. |
|--|----------------------|---|
| Substitute for form 1449A/PTO              | Application Number   | 10/800,112  |
| B JUN 1 0 2004                             | Filing Date          | MARCH 12, 2004  |
| INFORMATION DISCLOSURE                     | First Named Inventor | YUXIANG WANG, ET AL.  |
| STATEMENT BY APPLICANT                     | Group Art Unit       | UNKNOWN   |
|  | Examiner Name        | UNKNOWN   |
| (Use as many sheets as necessary)          |                      | ALAAT/00/15/DOLA/DOLA/DOLA/DOLA/DOLA/DOLA/DOLA/DOLA   |

**Submission Date** 

3

of

**Attorney Docket Number** 

| Examiner | Cite | Document Number                          | 1                           |  | Pages, Columns, Lines, Where                    |  |
|----------|------|--|-----------------------------|--|---|--|
|          | No.1 | Number-Kind Code <sup>2 (il known)</sup> | Publication Date MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Relevant Passages or Relevant<br>Figures Appear |  |
|          | A19  | US-6,153,935                             | 11/28/2000                  | Edelstein, et al.                                  |   |  |
|          | A20  | US-6,143,476                             | 11/07/2000                  | Ye, et al.   |   |  |
|          | A21  | US-6,140,226                             | 10/31/2000                  | Grill, et al.                                      |   |  |
|          | A22  | US-6,140,224                             | 10/31/2000                  | Lin  |   |  |
|          | A23  | US-6,098,568                             | 08/08/2000                  | Raoux, et al.                                      |   |  |
|          | A24  | US-6,080,529                             | 06/27/2000                  | Ye, et al.   |   |  |
|          | A25  | US-6,066,577                             | 05/23/2000                  | Cooney, III, et al.                                |   |  |
|          | A26  | US-6,064,118                             | 05/16/2000                  | Sasaki   |   |  |
|          | A27  | US-6,057,226                             | 05/02/2000                  | Wong   |   |  |
|          | A28  | US-6,035,803                             | 03/14/2000                  | Robles, et al.                                     |   |  |
|          | A29  | US-6,030,901                             | 02/29/2000                  | Hopper, et al.                                     |   |  |
|          | A30  | US-6,008,140                             | 12/28/1999                  | Ye, et al.   |   |  |
| •        | A31  | US-5,986,344                             | 11/16/1999                  | Subramanion, et al.                                |   |  |
|          | A32  | US-5,900,288                             | 05/04/1999                  | Kuhman, et al.                                     |   |  |
|          | A33  | US-5,866,920                             | 02/02/1999                  | Matsumoto, et al.                                  |   |  |
|          | A34  | US-5,789,320                             | 08/04/1998                  | Andricacos, et al.                                 |   |  |
|          | A35  | US-5,759,913                             | 06/02/1998                  | Fulford, Jr., et al.                               |   |  |
|          | A36  | US-5,461,003                             | 10/24/1995                  | Havemann, et al.                                   |   |  |
|          | A37  | US-2003/0091938 A1                       | 05/15/2003                  | Fairbairn, et al.                                  |   |  |
|          | A38  | US-2002/0090794 A1                       | 07/11/2002                  | Chang, et al.                                      |   |  |
|          | A39  | US-2002/0086547 A1                       | 07/04/2002                  | Mui, et al.  |   |  |
|          | A40  | US-2002/0001778 A1                       | 01/03/2002                  | Latchford, et al.                                  |   |  |
|          | A41  | US-2001/0007788 A1                       | 07/12/2001                  | Chang, et al.                                      |   |  |
|          | A42  |  |                             |  |   |  |
|          | A43  |  |                             |  |   |  |
|          | A44  |  |                             |  |   |  |
|          | A45  |  |                             |  |   |  |
|          | A46  |  |                             |  |   |  |

**Date Considered** Examiner

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450. If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

| lpase | e type a plus sign (+) inside this box | → +<br>OIPE                          | U.S. I                                    | PTO/SB/0:<br>Approved for use through 06/30/2006. OMB<br>Patent and Trademark Office: U.S. DEPARTMENT OF CC | 0651-003  |
|-------|--|--------------------------------------|---|---|-----------|
| _     | Under the                              | e Paperwork Reduction Act of 1996, n | o persons are required to respond to a co | flection of information unless it displays a valid OMB contr  | ol number |
|       | Substitute for form 1449B/PTO          | Y S JUN 1 0 2004                     | Application Number                        | 10/800,112  |           |
|       |  | A 3011 1 2004 4                      | Filing Date                               | MARCH 12, 2004  |           |
|       | INFORMATION [                          | DISCLOSURES                          | First Named Inventor                      | YUXIANG WANG, ET AL.  |           |
|       | STATEMENT BY                           | APPEICANT                            | Group Art Unit                            | UNKNOWN   |           |

**Examiner Name** 

Attorney Docket Number

(Use as many sheets as necessary)

Examiner

UNKNOWN

AMAT/8245/DSM/BCVD/JW

|                       |                          |   |       |               | <u> </u>  |                      |  |
|-----------------------|--------------------------|---|-------|---------------|---|----------------------|--|
| Shee                  | t 3                      |   | of    | 3             | Submission Date   | _4/7, 2004           |  |
|                       |                          |   |       | NON PATENT    | LITERATURE DOCUMENTS  | ·                    |  |
| Examiner<br>Initials* | Cite<br>No. <sup>1</sup> | Include name of the author (in CAPITA<br>e item (book, magazine, journal, ser |       |               | TAL LETTERS), title of the article (when appropriate), title of the erial, symposium, catalog, etc.), date, page(s), volume-issue lisher, city and/or country where published |                      |  |
|                       | C1                       | U.S. Patent   | Appli | cation 10/768 | 3,724, filed on January 3   | 0, 2004. (AMAT/8736) |  |
| ·                     | C2                       | U.S. Patent   | Appli | cation 10/799 | 9,146, filed on March 12,   | 2004 (AMAT/8244)     |  |
|                       | C3                       | U.S. Patent   | Appli | cation 10/799 | 9,147, filed on March 12,   | 2004 (AMAT/8390)     |  |
|                       | C4                       | U.S. Patent   | Appli | cation 10/383 | 3,839, filed on March 7, 2  | 2003 (AMAT/6328.C1)  |  |
|                       |                          |   |       |               | ,   |                      |  |
|                       |                          |   |       |               | <del></del>   |                      |  |
|                       |                          |   |       |               |   |                      |  |
|                       |                          |   |       |               |   |                      |  |
|                       |                          |   |       |               |   |                      |  |
| ,                     |                          |   |       |               |   |                      |  |
|                       | -                        | -   |       |               |   |                      |  |
|                       |                          |   |       |               |   |                      |  |
|                       |                          |   |       |               |   |                      |  |

**Date Considered** 

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandrio, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450. If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.